CLINICAL MEDICINE

DECEMBER, 1953

Osteoarthritis
Musculoskeletal Disorders
Ocular Headache
Breast Feeding
Treatment of Burns
Rheumatic Fever
Effects of Regitine
Cough
Post-Herpetic Neuralgia
Hermaphroditism
Oral Treatment of Pruritus
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Acute Barbiturate Intoxication
The Sprained Ankle
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Guillain-Barre Syndrome
Causes of Fainting
Use of Antibiotics
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Therapeutic Trends
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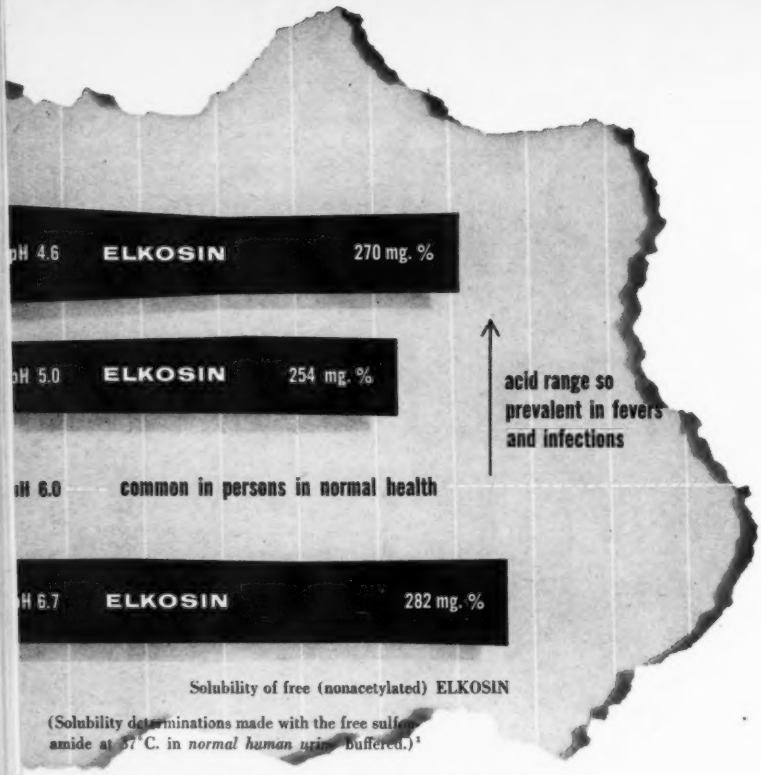
VOLUME 60
NUMBER 12



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1. Ziegler, J. B.; Bagdon, R. E., and Shabica, A. C.: To be published.

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60th Year of Publication

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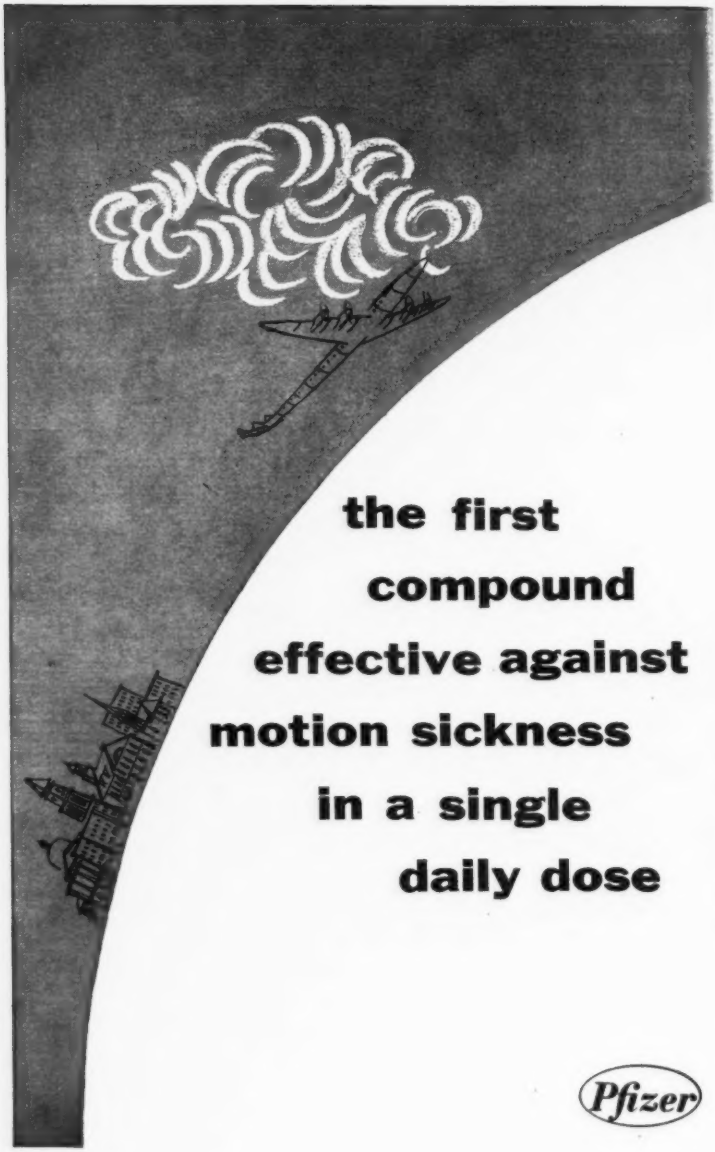
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ORIGINAL ARTICLES

Cough — A Neglected Symptom

More attention should be given to recurring coughs which may be warnings of major troubles

JAMES J. O'NEIL, M.D., F.C.C.P., *Omaha, Nebraska*

INTRODUCTION

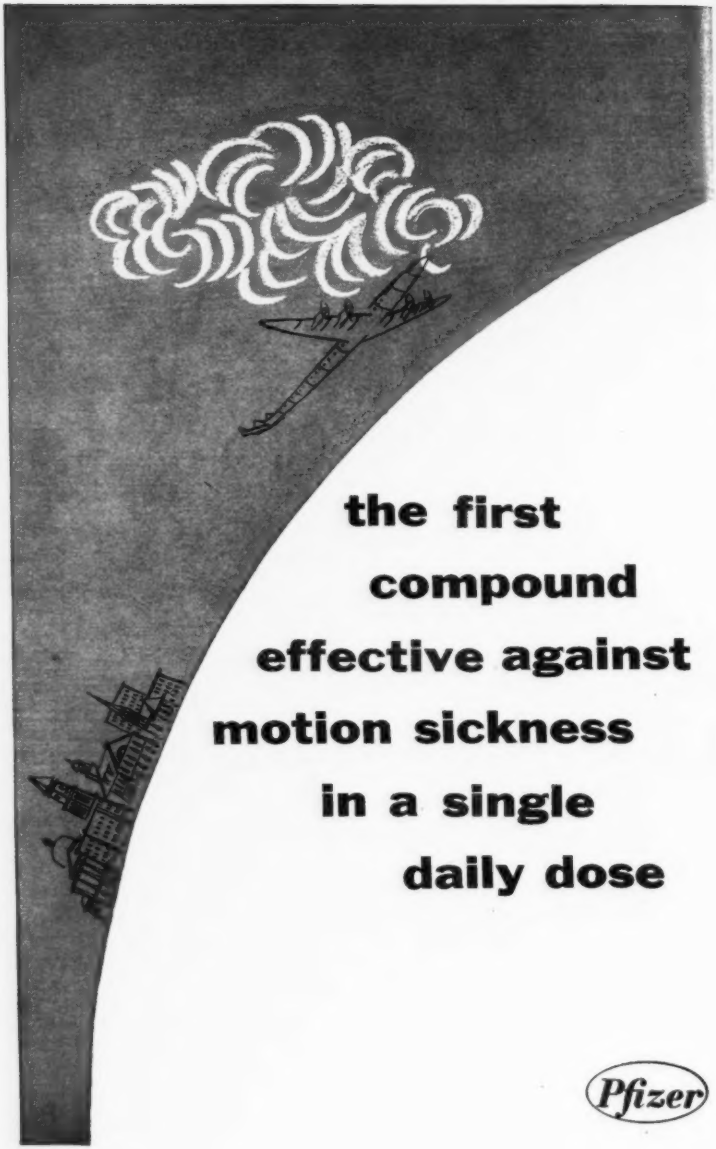
The majority of all reports on carcinoma of the lung list cough as a primary symptom. Our cigarette-conditioned society pays little attention to these recurring coughs which may be warnings of major troubles. Not all cough is a manifestation of disease of the respiratory tract. The treatment of cough without a knowledge of its essential cause may result in valuable time lost. The complications that can arise from its persistence are, in many cases, more serious than the disease which initiated the cough. We should like to review the classification, mechanism, underlying disorders causing cough, diagnosis, and management of the symptom until the etiology can be determined and removed.

CLASSIFICATION

Physiological cough is a protective mechanism guarding the lower respiratory tract and aiding it in the expulsion of foreign material. Cough becomes pathological when it goes beyond the discharge of this protective function. Descriptive words—as acute, chronic, productive, nonproductive, spasmodic, continuous, useful, useless, harmful, helpful—are of some value in determining a rational attitude toward cough.

MECHANISM

Following inspiration, the laryngeal musculature closes the glottis and the intrathoracic pressure is increased. With a sudden opening of the glottis, the compressed air is released as the bechic blast and secretions or foreign material are expelled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from the larynx, trachea and larger bronchi. The finer bronchi are emptied by the thoracic musculature compressing the lung—the tussive squeeze. Inspiration enlarges the tracheobronchial tree in all dimensions to again produce the bechic blast.[1]

ETIOLOGY

The primary causes in cough production are pathological changes in the respiratory system. The secondary causes are those changes in other systems causing stimulation of the vagal afferent fibers to initiate the cough reflex.

DIAGNOSIS

The primary and secondary factors involved in cough production are so many and various that the diagnosis of the underlying cause frequently demands the utilization of a multitude of methods. First the history must cover the onset, character, duration and frequency. A cough following an upper respiratory infection would lead to search for the cause in the nose, paranasal sinuses or pharynx. A persistent cough with weight loss, elevated afternoon temperature, and night sweats would practically declare advanced tuberculosis. A persistent, productive cough with little weight loss or morbidity would suggest bronchiectasis.

An important point in every history of cough is a change in its character, e.g., a persistent dry cough that becomes productive of blood-tinged sputum could mean the progression of a chronic tracheobronchitis to an endobronchial or pulmonary neoplasm.

Since some 60% of coughs are due to disorders of the upper respiratory tract, a complete otorhinological examination, with x-ray studies of the paranasal sinuses and a diagnostic irrigation of any suspected sinus will frequently reveal the cause of the cough.

Physical examination of the chest with careful interpretation and correlation of the findings will aid in determining the type of cough and the underlying condition to be treated.

Routine x-ray studies of the chest in a patient with cough should be made and in many cases will reveal the cause to be in either the air or food passages. The cough of a 10-month-old child recently seen by us was treated as a mild upper respiratory infection for eleven days with intensive antibiotics without improvement. X-ray examination of the chest revealed a metallic object in the cervical esophagus, and through an esophagoscopy a cent was removed and the cough soon ceased.

Diagnostic bronchoscopy and bronchography should be carried out in every case of persistent cough for which the cause cannot be determined by simpler measures. These procedures are to be instituted without delay when bronchiectasis, endobronchial foreign body, or pulmonary neoplasm may be the cause of the cough. With the rapid advances of thoracic surgery in the treatment of bronchiectasis and bronchogenic carcinoma, the early use of bronchoscopy and bronchography will make the diagnosis soon enough to save many a life.

When, from the history, an allergen is suspected as the underlying cause of the cough, an allergic study of the patient should be carried out. From a practical standpoint this is best done by placing the patient on one of the antihistaminics as a therapeutic trial followed later by a series of skin tests for the inhalant group of allergens. The limitation of

1. Jackson, C., Jackson, C. L.: *Am. J. M. Sci.*, 186: 849, 1953.

the skin tests to the inhalant group has proven most practical, frequently revealing a common offender which can either be removed from the patient's environment, or to which the patient can be hypodesensitized by the method of Hansel.[2]

Persistent cough for which no organic cause can be found may be purely imitative, the result of habit or hysteria. This is particularly important in a child or young adult for the recognition of an underlying psychiatric disorder at an early age may well preclude the development of conversion phenomena more serious than cough.

MANAGEMENT

A thorough discussion with the patient at the outset about the problems of his cough will do much to gain his cooperation. Smoking should be discontinued promptly. Dust and other respiratory irritants naturally should be avoided, as should persons suffering from respiratory infections. Outside bedroom windows should be closed in damp and cold weather. Air conditioning equipment should be used judiciously. Warm sleeping apparel and warm daytime clothing should be worn. Changes in temperatures and drafts must be avoided. Exercise should be reasonable without causing fatigue.

The cough reflex can be depressed by the central action of the anodyne expectorants. The opium alkaloids depress the irritative reflex and decrease the amount of bronchial secretions. Codeine, tincture of opium, and pantapon are the most commonly used. Piperidine (sedulon) depresses the medullary center, especially the cough center.[3]

Inflammatory conditions of the tracheobronchial tree are alleviated by the sedative expectorants which promote secretion and decrease the paroxyms of cough. The saline expectorants; e.g., ammonium chloride for "tight" coughs; ammonium carbonate for liquifying thick mucopus; iodides for increasing and thinning bronchial secretions. Nauseant expectorants, such as ipecac, emetine and apomorphine, act centrally chiefly to increase the secretion and lessen the viscosity of bronchial mucus. Demulcent expectorants, such as syrup of acacia and licorice, diminish the cough by a local soothing effect on the inflamed pharyngeal mucosa.[4]

Bronchial secretions can be diminished by the stimulating expectorants, such as terpin hydrate, calcium creosotate, and the antispasmodic drugs such as tropine. Expectoration can be stimulated by such drugs as coramine and cardiazol.[5]

The rate of respiratory motion, which is important in the removal of secretions from the tracheobronchial tree, can be increased by inhalations of 5 to 10% carbon dioxide in oxygen. It is indicated in cases of shallow breathing due to debilatation, general anesthesia, or bronchiolitis. It should not be used in cases of emphysema, pulmonary hemorrhage or when the cause of the cough is outside the lungs.

The local use of iodinized oil in the tracheobronchial tree is of some help in the cough of bronchiectasis, but its use should be followed by postural drainage and it should be understood that its benefits are only temporary.

Aerosal antibiotic therapy has attained a definite place in the management of the cough due to inflammatory reactions in the tracheobronchial and pulmonary infections.

2. Hansel, K. F., *Clinical Allergy*, C. V. Mosby Co., 1953.

3. & 4. Sollmann, T.: *A Manual of Pharmacology*, 7th edition. 1948.

5. Goodman, L., Gilman, A.: *The Pharmacological Basis of Therapeutics*, 1941.

The recent reports of trypsin aerosal therapy are encouraging as a new means of treating pulmonary infections responsible for cough.[6]

SUMMARY AND CONCLUSION

The mechanism and etiology of cough have been presented to emphasize the multiple factors involved in its production and to stress the importance of an accurate diagnosis of its essential cause. Until the cause of the cough can be accurately determined and adequately treated, the symptom should be managed on a sound physiological basis. For this reason, the physio-pharmacological consideration of central and local drug therapy for its management is given.

In conclusion, cough is a symptom which has for the most part been neglected in clinical medicine. Its importance is apparent from the multiplicity of etiological factors. The diagnosis of the essential cause is sometimes difficult but is all important before the underlying pathological condition can be remedied and the cough cured.

6. Yates, J. L., Goodrich, B. E., *Dis. of the Chest* Sept., 1953.

True Hermaphroditism with Report of a Case

True hermaphrodites are subjects having gonads and external genitalia of both sexes either separate or in varying proportions, and in a classic sense should be able to fertilize a female, be fertilized by a male, and fertilize themselves.

As far as can be determined the case to be reported is the 51st true hermaphrodite to be recorded and is classified as the lateral or alternating type having an ovary and a testis. This is probably the 14th case in this group.

A colored person, age 34, first seen Nov. 2, 1949. He was raised as a girl; later, at 21, went with women. At the age of 30, he was married to a woman and says he has normal sexual relations about every 10 to 14 days. His orgasms are "both ways" (i.e. through the clitoris and vagina) and he says he is compatible with his wife. She has never been pregnant.

His chief complaint was dysmenorrhea and r. lower quadrant, abdominal pain; dysmenorrhea had increased in the last few years and he was incapacitated for several days every month.

He has a normal intra-abdominal ovary and an atrophic right intralabial testicle proven by biopsy. Being married to a woman his female organs were removed.

W. C. Cantey, *Jour. Sou. Car. Med. Asso.* XLIX:175, 1953.

The Treatment of Osteoarthritis

Comfort and improvement of function are the first considerations in the treatment of this disability

JOHN G. KUHNS, M.D., *Boston, Massachusetts*

Osteoarthritis is among the commonest of the disabling conditions found in patients after middle age, and it is frequently looked upon as a part of the degenerative process which accompanies aging. Evidence of its presence is observed in the x-ray pictures of the joints in all patients after the age of fifty, but only about 10% of these individuals will have sufficient disability to require treatment. This number will increase until at 70 years of age 50% will have disability. Symptoms will vary from mild stiffness to constant pain and limitation of motion when the weight-bearing joints are affected.

Since we do not know the causes of osteoarthritis a number of terms have been used to describe this condition, the commonest terms being hypertrophic arthritis, degenerative joint disease and arthrosis deformans. Some of the changes in the joints are the result of aging and attrition. A number of other factors have been discussed as possible sources of the osteoarthritis. Oft-repeated, mild trauma can lead to more rapid development of osteoarthritis. Postural strains and obesity exert a mechanical influence on the progression of the disease. Severe disalignment of the articular surfaces, after severe injury to, or disease of a joint is secondary osteoarthritis. Infection seems to play no part in the development of osteoarthritis, but symptoms are more severe when infection is present. Endocrine disturbances are possible etiological factors and are of particular importance when symptoms appear at the male or female climacteric.

The pathologic changes develop slowly, and no definite time can be given in any case as the date of onset of the disease. The first observable change is an alteration in color in the articular cartilage from glistening bluish-white to a dull yellowish-gray. The elasticity of the cartilage decreases and small areas of erosion appear on its surface. Microscopic examination will show loose strands of collagen with dead cartilage cells. The hyaline cartilage may degenerate over the en-

tire surface, or it may be only on scattered patches. Often the bone becomes denser beneath the eroded cartilage. About the margins of the joint there is proliferation of cartilage which quickly changes to bone, forming nodes or spurs at the edges of joints seen in the x-ray pictures. With further development of these spurs motion in the joint becomes limited, but ankylosis never occurs. Thickening of the synovial membrane may occur later from mechanical irritation. Degeneration of the intra-articular structures is often seen after many years.

The symptoms are usually not severe and disability develops very slowly. There is little if any general change. The patient is well nourished, the blood cell count shows no change and the erythrocyte sedimentation rate is normal. There is usually no heat or redness and little muscle spasm. The commonest symptom in this disease is stiffness, particularly in the muscles about the involved joint. Motion that is sudden or prolonged can lead to excessive pull or overstretching of the ligaments about the joint. It has been suggested that the stiffness is the result of degenerative changes in the muscles or to a fibrositis, the result of impaired circulation.

The next commonest symptom, pain, may result from overstretching of ligaments or from impingement of soft tissues at the margins of the joint. The articular cartilage and the bony spurs about the joints have no sensory nerves, but the synovial membrane and articular capsule are richly supplied with sensory nerve endings. In osteoarthritis, synovial fringes are readily pinched between bony spurs and articular surfaces. Less commonly, loose bodies in the joint or a displaced, degenerated semilunar cartilage cause the impingement. In a few cases the cause of pain is irritation at the neural foramina by bony proliferation encroaching upon the nerve roots. This pain is referred over the distribution of that nerve root.

Crepitus and swelling and limitation of the range of motion in the joint are uncommon features. Any limitation of motion develops so slowly the individual is not aware of it. It results from muscular spasm or contracture and from the bony overgrowth about the joint. It is seen in most severe form in the low back or at the hip joint.

Since we do not know the causes of osteoarthritis, treatment must be directed to the relief of these symptoms. Comfort is the chief aim but in many instances function also can be improved; in many instances all symptoms disappear. The type of work can be made less strenuous, particularly rapid, repetitive work. Faulty posture should be corrected as fully as possible. The economic and social worries of these older people should be lessened and the environment made pleasant and stimulating. Simple measures are usually adequate in the treatment of osteoarthritis.

There is no specific medication. Vaccines and injections of gold salts have been of no avail. Cortisone and hydrocortone (Compound F) have given only temporary relief and have not changed the articular pathology or the deformity. Phenyl butezone (Butazolidin) relieved pain only. For pain salicylates or aspirin usually suffice. Repeated use of narcotics is never indicated. If the pain is severe and continued one should look for some other disease, particularly metastatic cancer.

Upbuilding measures are usually not required since the patients are in a good state of nutrition. The diet should usually be decreased in ca-

lories. Many of these patients are overweight; for these a reducing diet, high in protein, moderate in fat and low in carbohydrate should be prescribed. Potassium iodide, liver extract and vitamin B have their proponents. Occasionally, dilute hydrochloric acid is helpful. Vitamins are of value if the diet is deficient in these substances, a common occurrence in the aged. Hormones should be given if a lack is demonstrated. Thyroid and estrogen or testosterone are beneficial in some cases.

Many of the symptoms can be relieved by physiotherapy. Almost always pain and muscular soreness will subside with rest. If symptoms are severe, the patient should have bed rest for a few days. If one joint is very painful, a light plaster cast is indicated for a week or two. A bandage or a light splint for the inflamed joint is usually all that is required. In some cases a corset, brace, or spinal jacket is required, even for the remainder of the patient's life.

Exercises are prescribed to correct muscular weakness, stiffness and contractures and to improve the general posture and the alignment of the joints. The exercises about the joint begin with mild contractions of the muscles and progress to exercises against resistance. As full a range of motion should be regained as is possible without pain. Such exercises should be continued for at least a month since improvement occurs very slowly. Postural exercises must be continued for a much longer period in order to obtain any improvement.

Massage is helpful over the muscles adjacent to the sore joints but is not to be given over the joint itself. Massage is of particular value in the aged but exercises are preferable to massage in the robust patient. A hot tub bath or shower for 10 to 15 minutes is beneficial to many patients. Such hot baths can be debilitating and should not be taken more than twice a week.

Warmth in all forms, including warm rooms and warm clothing contribute to comfort. Heat to the joints, to be effective, should be applied for one-half hour two or three times a day—as hot as can be borne comfortably. Liniments or rubefacients applied after heat prolong the sense of warmth and are mildly sedative as well.

X-ray treatment is of value in the large painful joints and in the spine. Its action upon the joint or the disease is unknown. About 100 r are given twice weekly until 1000 r have been given. No harmful effects have been observed from this dosage; swelling subsides and pain decreases.

Proper shoes which help maintain the balance of the body are helpful. The patient should sit in a straight-back chair. The bed should be firm, non-sagging and only one small pillow should be used unless there is difficulty in breathing. Traction is helpful particularly in osteoarthritis of the cervical spine. Crutches are used temporarily when there is much damage in the lower extremity and help greatly when there is much pain on weight-bearing.

Surgery has a definite application when pain and disability are not relieved by the measures already mentioned. The aim of treatment is comfort rather than rehabilitation. Surgery should not be considered when the general condition of the patient is poor or if it offers little improvement in the patient's comfort and movement in the joint. It is used more often for the relief of pain than for increase in motion. Surgery is employed more frequently in lower extremities, as the joints

which show severe disability most often are the knee and the hip. The objective is to make walking and sitting more comfortable. At the ankle and foot, surgery is occasionally required for severe, rigid valgus in osteoarthritis. Usually a wedge osteotomy is employed to secure a good position for weight bearing. The same procedures are carried out for hammer toe or hallux valgus as in static disabilities of the feet. Proper shoes and supports under the arches of the feet usually relieve symptoms sufficiently and surgery is not required often.

In the spine one frequently observes irritation of the nerve roots with radiating pain. Rest and traction relieve most of these. If they persist a myelogram is usually performed to aid in determining the location and extent of pressure upon the nerve root. Such pressure is relieved as simply as possible. In both the cervical and lumbar regions disintegration of the intervertebral discs sometimes accompanies osteoarthritis. If this produces pressure on a nerve root, removal of the disc substance is indicated.

Surgery is well tolerated in these older patients if electrolyte balance is maintained and blood loss is replaced. The anesthesia employed is usually spinal. The patients move about in bed or preferably sit up the day following operation, to reduce the hazard of venous and pulmonary complications.

SUMMARY

Osteoarthritis is one of the commonest disabling conditions found in older individuals. The bony spurs about the margins of the joint are the mechanical cause of the pain and stiffness found in this disease. Since we do not know the causes, treatment must be symptomatic. Treatment should be both general and local for the inflamed joints. In general treatment, overweight is corrected, clothing and houses should be warm. Often, work must be slower and less vigorous. There are no specific medicines for osteoarthritis. Rest and heat to the joints always relieve symptoms temporarily. If joints sprain readily some form of joint brace may be required. Surgery may be necessary if symptoms are not relieved by conservative measures.

Prognosis in Cases of Hytertension

Diastolic pressure of over 130, itself, indicates a bad prognosis; but in the much commoner, less severe, cases the degree and rate of progression of the cardiovascular, retinal and renal changes are more helpful in deciding the prognosis.

The stage of disease is best judged by presence or absence of advanced retinal changes, albuminuria in excess of a trace, cardiac enlargement, and abnormality of ECG. Malignant hypertension, whether "essential" or renal in origin, is characterized by papilloedema with a high diastolic pressure and by the presence of acute arteriolar necroses.

It is well to remember that cases of malignant, or rapidly progressive, hypertension form a very small proportion of the total hypertensive population, and it is only for these few patients that drastic medical or surgical treatment is indicated.

Ed., *British Medical Jour.* 6:1319, 1953.

Musculoskeletal Disorders

Many musculoskeletal disorders are initiated by lesions in the lower back

R. J. DITTRICH, M.D., *Duluth, Minnesota*

The anatomic arrangement of the human body provides two sites in the lower part of the back which are particularly vulnerable to injury. The result of such injury is a painful lesion, from which pain and tenderness may be referred to many other portions of the body. In addition, autonomic nerve reactions may develop from the afferent impulses, to intensify or complicate the clinical picture. The entire chain of manifestations can be eliminated by a simple operative procedure at the site of injury.[1], [2]

PATHOLOGIC CHANGES

The two locations which are predisposed to injury are, 1) the midsacral paraspinal region and, 2) the midlumbar region over the lateral portion of the sacrospinalis muscle. The mechanism of injury is a rupture of the lumbodorsal fascia, produced by contraction of portions of muscles attached to the fascia at these points,—the gluteus maximus at the sacral level and the latissimus dorsi in the lumbar region. With subsequent healing, the continuity of the fascia is restored, as a rule completely. In the process of repair, adhesions are formed between the torn fascia and a layer of subfascial fat tissue, which evidently represents the "basic fat pattern" of Copeman and Ackerman. The fibrosis extends for a variable depth into the fat layer.

The microscopic appearance of the damaged structures is characterized by distortion of the fascia and a variable degree of fibrosis of the subfascial fat, with adhesions between this and the fascia.

The topographic location of the damaged structures is remarkably constant. In the sacral region, it is situated at the level of the third sacral vertebra, lateral to the spinous process. The afferent nerve supply to this area is provided by the first sacral nerve.

The injured site in the midlumbar region is located over the lateral

1. Dittrich, R. J., *Minnesota Medicine*, XXXV:147-151, 1952.
2. Dittrich, R. J., *Journal-Lancet*, LXXIII:63-68, 1953.

portion of the sacrospinalis muscle, at the level of the upper rim of the iliac crests. This lesion lies within the afferent field of the second lumbar nerve.

Pathologic changes of this type have been found in 35 of 40 sites which were explored surgically. In a much larger group they have been suspected; in many of the latter, the probability of lesions of this nature was verified by diagnostic injection of local anesthetic.

The full extent of the pathologic changes can not be conveniently determined at operation. For practical purposes, it is necessary to resect only those portions of the abnormal structures in which tenderness is elicited; the fibrosis obviously extends beyond the area which is included in the resection of the tisses.

The latissimus dorsi muscle, through its aponeurosis of origin, arises in part from the lumbo-dorsal fascia in the midlumbar region; the osseous origin includes the spinous processes as far distally as the sacral levels. The practical importance of this arrangement lies in the fact that pain mechanisms are determined by the spinal segmental innervation of the structures in which the noxious impulses originate; with irritation of the tendinous elements of the latissimus dorsi at either the sacral or the lumbar areas, the reference of pain and tenderness would be noted in the afferent fields of the sixth, seventh and eighth cervical nerves.

This type of pathologic change is to be distinguished from the herniations of fat tissue described by Copeman and Ackerman,—the so-called "herniated fat pads." The latter condition is rare and may be classified as a surgical curiosity.

Since the structural alterations in the fascia and the subfascial tissues have been demonstrated with reasonable certainty as a significant anatomic abnormality clearly related to a variety of clinical pictures, it becomes increasingly necessary to undertake further investigations pertaining to the mechanism of the injury, the exact extent of the pathologic alterations, and the arrangement and relationships of fascia, muscles and subfascial tissues in order to clarify the problems which are encountered in the genesis of the structural lesion. This responsibility may properly be shifted to the anatomist and the pathologist.

PHYSIOLOGIC ASPECTS

A pathologic lesion of this type gives rise to somatic and/or autonomic nerve reactions.

Somatic nerve effects are chiefly referred pain and referred tenderness. These phenomena are, as a rule, sclerotomic in distribution; i.e., they may appear in any other deep somatic structures which receive their afferent nerve supply from the same spinal nerve as that in which the irritation occurs. Due to this arrangement, clinical manifestations frequently develop in locations far removed from the primary site of origin of the impulses, or trigger-point. The generally accepted sense of referred phenomena as "reference in continuity" embraces only a small fraction of the scope of these processes.

Referred pain is believed to be due to misinterpretation by the central nervous system of the real source of the pain; this form of pain is abolished immediately after anesthetization of the trigger-point. Referred tenderness (hyperalgesia) is regarded as the result of liberation of metabolites at the reference zone; this viewpoint receives support from the observation that it requires a period of 3 to 5 hours for subsidence

of the tenderness, after anesthetization of the primary source of the noxious impulses. Knowledge of this difference in response to anesthetization is of value in the interpretation of clinical disorders.

Referred pain and tenderness may be ipsilateral, contralateral or bilateral. The pathologic lesion is, as a rule, unilateral even though both the lumbar and sacral sites are deranged.

Autonomic nerve reactions include vasomotor, trophic and visceral disturbances. The afferent stimuli producing such effects may be derived from primary and/or reference sites of pain and tenderness.

CLINICAL FEATURES

The clinical pictures resulting from anatomic abnormalities of this type vary widely, although in most instances the outstanding subjective feature is pain. The pain described by the patient is almost invariably referred pain; the patient rarely locates the pain at the site of the injury. Most commonly, the lower part of the back is emphasized as the location where pain is most intense.

The principal objective finding is tenderness which may be mild or marked in degree, and may be restricted in extent or widely distributed throughout the body.

Correlation of the anatomic abnormalities with the pathophysiologic effects led to recognition of three distinct somatic pain syndromes:

1). The midsacral (first sacral nerve) syndrome. The chief clinical feature is pain, usually described by the patient as being in the buttock and frequently radiating downward in the lateral and posterior aspects of the thigh and the leg. Tenderness is usually most prominent in the lower part of the buttock. The anatomic abnormality is situated in the paraspinal region at the level of the third sacral segment.

2). The midlumbar (second lumbar nerve) syndrome. The site of injury is located at the level of the upper margin of the iliac crests, overlying the lateral portions of the sacrospinalis muscle. The usual distribution of referred pain and tenderness includes the lower lumbar, the upper sacral and the sacro-iliac areas; less commonly the groin and the adductor region of the thigh.

3). The latissimus dorsi (sixth, seventh and eighth cervical nerve) syndrome. With injury of the fascia at either the midlumbar or the midsacral sites, the tendinous elements of the latissimus dorsi muscle fused with the fascia are also damaged. When the torn portions of the aponeurosis are irritated, pain and tenderness are referred in the distribution of the sixth, seventh and eighth cervical nerves. These nerves supply the sensory innervation for the deep somatic structures of the scapular region, the shoulder and upper extremity, the serratus anterior, the pectoralis major and minor, the scaleni, and the spinal and paraspinal structures of the cervico-dorsal region. The wide distribution of manifestations gives rise to clinical pictures which are frequently diagnosed as arthritis, fibrositis, myositis, bursitis or neuritis. The complaint of chronic headache, with or without rigidity of the neck, may be due to development of referred phenomena in the spinal and paraspinal structures innervated by the sixth, seventh and eighth cervical nerves.

In addition to somatic nerve effects, clinical features have been observed which were interpreted as autonomic nerve reactions. Among these are attacks of dizziness, pallor of the skin, especially the face, muscle weakness, sensory disturb-

ances of the skin, particularly in the hands and feet, anorexia, abdominal pain, dysfunction of the urinary bladder, and reflex sympathetic dystrophy. In many instances, clinical evaluation of the patients elsewhere has resulted in a diagnosis of neurosis, psychoneurosis, hysteria or psychosomatic disease.

As a method employed for verification of a suspected anatomic lesion, the most reliable procedure is that of anesthetization of the fascia and subfascial structures. This consists of injections of 4 to 6 cc. of 2 per cent procaine in isotonic salt solution. Due to the length of time required for subsidence of referred tenderness, it is often advisable to repeat the injection after about two hours, in order to prolong the anesthetic effects. It is then necessary to reexamine the patient after an additional period of 2 to 3 hours.

In the procedure of local anesthetization, one important precaution is necessary,—injection of local anesthetic into a reference zone in which the tissues are firm and unyielding, as ligaments or tendons, the increased pressure of the injected fluid may greatly aggravate the pain. For the particular problem encountered at the sites in the lower part of the back, it is advisable to avoid infiltration of the reference zone of the second lumbar nerve,—the lower lumbar, the upper sacral and the sacro-iliac regions.

TREATMENT

The only effective and reliable method of treatment of the pathologic condition is surgical correction. This is performed under local anesthesia. The procedure is similar for the lumbar and the sacral areas. A transverse incision, 2 to 3 inches long, is made over the trigger-point. The fascia is exposed and incised at right angle to the skin incision. The pathologic tissue is excised in depth to a layer of fascia covering the sacrospinalis muscle and in area adequate to include the site of tenderness determined from examination. A soft rubber drain is inserted into the operative field and retained for 5 to 7 days. If drainage is inadequate, the clinical manifestations recur promptly. When the latissimus dorsi syndrome alone is the cause of disability, it is necessary only to resect the fibers of the aponeurosis, which are believed to carry the painful impulses; this is carried out above the level of the site of irritation. Drainage is necessary for one to two days.

The surgical principle applied in this procedure is denervation of the tissues in which the painful impulses originate. Although the extent and density of the scar tissue resulting from the operation are as pronounced as they were before the operation, or even more so, there has been no significant tendency to recurrence of the clinical symptoms in cases which were completely or substantially relieved. In two patients, symptoms of the latissimus dorsi syndrome returned and required additional surgical treatment. Periods of post-operative observation varied from several months to two and one half years.

Case Reports

Case 1. (Midsacral, midlumbar and latissimus dorsi syndromes) A woman, 31 years old, employed as a cook in a hotel, was seen in February, 1952. Two weeks previously, following a "cold", she noted pain in the left shoulder, weakness and numbness of the left hand and pain in the lower part of the back. Two days ago she noted pain in the left thigh, coldness and numbness of the left foot and a limp on the left. She had mild backache since she was 14 years old. During the past year, backache was more frequent and more intense, though not disabling. An appendectomy was performed at age of 14 years and a hysterectomy 18 months ago.

Examination showed a moderate limp on the left. In the lower part of the back, she

located the pain on both sides in the lower lumbar, sacral and sacroiliac regions. Diffuse tenderness was elicited in those regions and also in both buttocks. Tenderness was also found in the right midsacral paraspinal region and in the right midlumbar region over the lateral portion of the sacrospinalis muscle. On the left side, tenderness was elicited in the infraspinatus, supraspinatus, the latissimus dorsi and at the insertion of the deltoid muscle. In the left hand, the skin was anesthetic to pinching and pinprick as far proximally as the wrist; hypoesthesia was present between the wrist and the elbow.

The suspected trigger-points (right midsacral and right midlumbar regions) were injected with procaine, eliminating tenderness at these sites. Two hours later, there was a noticeable diminution of the limp and the pain in the shoulder. The two sites were re-injected. After a period of two hours, the limp had disappeared completely and she stated that the left shoulder felt normal; tenderness in the lower part of the back was greatly reduced; sensation in the skin of the left hand showed no change, though she reported later that this was found to be normal about six hours after the first injection.

Operation consisted of exploration of the sacral and lumbar sites on the right side and resection of a layer of fibro-adipose tissue from the subfascial spaces. Following this, she was promptly and completely relieved of all features of the disability. She resumed her regular work three weeks after the operation; about one month later she stated that she was more comfortable than she had been for the previous three years. She continued at her work and fifteen months after the operation, she reported that no recurrence of her former symptoms had developed.

Case 2. (Midsacral, midlumbar and latissimus dorsi syndromes; non-union, fracture, neck of femur). A 56-year-old man was examined in November 1947. One year previously he sustained a fracture of the neck of the left femur; he was treated elsewhere for this ailment over a period of about three years in which five operations were performed; two for internal fixation, and one each for drainage of a sterile abscess, attempted arthrodesis and sub-trochanteric osteotomy. The arthrodesis failed, resulting in nonunion.

About one year after the injury, while using crutches, he developed pain, weakness and numbness of the right upper extremity. He used alcohol in excess, requiring hospitalization on several occasions. He complained bitterly of pain in the back and left hip and thigh; this was ascribed to the fracture and the operative trauma, although it was greatly out of proportion to the degree of discomfort usually expected in such conditions.

At the time of the first examination, evaluation of the fracture was based largely on roentgenographic appearance of the bone. In the right upper extremity, there was noted a generalized weakness of all muscles; anesthesia of skin of the thumb, index and middle fingers, hypoesthesia of the ring finger and normal sensation in the little finger.

He was re-examined in January 1952. He had a non-union of the neck of the left femur, used crutches, was able to bear part of his weight on the injured extremity, and had had no further treatment of the fracture. The condition of the right upper extremity had progressed somewhat in the degree of the disability. He complained of constant pain in the lower part of the back, the left hip, thigh and leg. He also complained of pain in both shoulders and in the upper part of the back on both sides. He was able to carry out some light tasks in a shop at his home.

Examination showed extensive distribution of tenderness in the lower part of the back, both buttocks, the left hip and thigh, together with distinct tenderness in the left midsacral paraspinal region and the midlumbar area over the lateral portion of the sacrospinalis muscle; the findings were characteristic of the midsacral and midlumbar syndromes. In the upper part of the body similar features were noted, particularly a generalized weakness of the muscles in the right upper extremity and the sensory changes in the skin of the hand as they were observed at the first examination. Dynamometer readings with the right hand were 15 and 25 pounds; those of the left hand were 65 and 75 pounds. The clinical picture in the upper portions of the body was interpreted as the latissimus dorsi syndrome.

This evaluation was more firmly established later by diagnostic injection of local anesthetic into the suspected trigger-points; following this procedure he was substantially relieved of the pain, and sensation of the right hand was noticeably restored. These changes were maintained for one week.

Operation at both sites (May 1952) revealed the typical changes,—fibrosis of the subfascial fat and adhesions between this and the ventral surface of the fascia. These were corrected in the usual manner.

The man described himself as being "free from all pain" previously experienced. He reported that, within two hours after the operation was completed, he was able to perform movements of the right hand which had been impossible previously. He

described this change in the right hand by stating "the glove is off". Dynamometer readings in the right hand, 24 and 48 hours after operation, were recorded at 65 and 70 pounds.

The man was seen only once since the operation, for reasons of his own. Indirect reports indicate that, for four months after operation, he had retained the relief noted in the earlier post-operative period. Beyond this, no further information has become available.

SUMMARY

Clinical observations have yielded information that many types of musculoskeletal disorder are initiated by demonstrable pathologic lesions in the lower part of the back. The structural changes are very constant in topographic location and in appearance. From these sites of deranged tissue, somatic and autonomic nerve reactions develop, to represent the clinical features from which the patient seeks relief. Somatic nerve effects are predominantly referred pain and referred tenderness; these phenomena, from anatomic and physiologic considerations, may be transmitted to many other portions of the body. Autonomic nerve reactions elicited by afferent impulses include vasomotor, trophic and visceral disturbances. A variety of obscure clinical pictures characterized by pain in deep somatic tissues, with or without autonomic concomitants, are clarified by knowledge of the nature and mechanism of the anatomic abnormalities. Within the scope of somatic nerve effects, three separate pain syndromes can be identified as results of noxious influences arising in the pathologic tissues. Effective treatment consists, in surgical principle, of de-afferentation of the deranged tissues.

Thyrotropic Hormone in Infants and Children

Administration of thyrotropic hormone to children with secondary hypothyroidism is reported to have resulted in an increase in thyroid uptake. Six hypothyroid children without goiter (5 months to 15 years of age), and five euthyroid controls (1 to 10 years of age), were given 15 to 40 uc. of carrier-free I^{131} orally or through a polyethylene tube. The 24-hour thyroid uptake of I^{131} in both groups fell within the range of 12 to 20 per cent (much less in three hypothyroid patients). Thyrotropic hormone, 5 to 15 mg. was then given intramuscularly in 4 divided doses for a period of 48 hours. This was followed by another thyroid uptake study.

In the controls the 24-hour thyroid uptake of 1^{131} increased from 2 to 12 per cent. Of 4 hypothyroid children assumed to have primary end-organ deficiency, 2 demonstrated no 1^{131} uptake, while the remaining 2 showed an increase of 8 per cent. In two hypothyroid children who demonstrated collateral signs of pituitary insufficiency, however, the investigators observed an increase of from 35 to 38 per cent over their previously determined thyroid 1^{131} uptake.

This procedure appears to be of practical diagnostic value in differentiating primary from secondary hypothyroidism.

E. E. Pickering, E. R. Miller, *Am. J. Dis. Child.*, 85: 135, 1953.

Management of A Sprained Ankle

If neglected, this "minor injury" may later result in a weak ankle; patient should be put to bed

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I heard a doctor say the other day "Oh, he has only a sprained ankle". Far too often emphasis is placed on that little word "only" with the result that years later, from that patient having "*only*" a sprained ankle, we may hear "ever since I sprained my ankle"—years ago—"its been weak; it turns in on me and when ever I walk on uneven ground I am never sure of myself." When a patient comes limping in with the story of turning his ankle and has some swelling on the outer side of his ankle, it is insufficient therapy and evaluation to merely strap up the ankle and give him some aspirin as though you were treating him for a headache. Oh yes, you may have had a roentgen examination and have a report back "no evidence of disease or injury"; but this does not justify a superficial evaluation of an ankle injury. This attitutde on the part of doctors is responsible for the layman's old adage "a sprain of the ankle is worse than a fracture."

The term "sprain" is not an exact diagnosis; it is a syndrome of concurrent symptoms which typify a varied degree of injury to the ankle. From a common simple tear of the capsule with minor stretching and tear of the ligaments to the complex injuries with extensive laceration of the ligaments, injury to the muscle structures, as well as fragmentation of the articular cartilage and dislocation of the talus with widening of the ankle mortise. What is often called "minor injury" of the ankle fails to give consideration to major pathology because it is not obviously evident. The ordinary posterior-anterior and lateral roentgenogram may not show that there has been a momentary dislocation of the talus at the time of injury which when weight bearing is removed, returns to its normal relationship in the ankle mortise. It may not even show a separation of the lower end of the tibia and fibula if taken immediately after the injury. The muscle spasm, swelling, tenderness and pain may prevent the examiner from making an adequate manipulative examination of th injury.

Since "sprain" suggests a minor injury, with swelling, pain and

spasm of the muscles, without obvious displacement, deformity and bone crepitus, and since the treatment of sprains must be commensurate with the degree of injury, we classify sprains as, (1) simple sprains and (2) complex sprains.

Simple sprains are those in which there is a minor capsular tear and minor stretching and tear of the ligaments, with no disturbance of the ankle mortise. Complex sprains are those in which there has been extensive tearing of the ligamentous structure with disruption of the stability of the ankle mortise. Here the bones of the joint are momentarilly displaced, and the articular cartilage, synovial membrane capsule, ligaments and even the muscles and tendons may be damaged.

One might add a third classification, that of complicated sprains, but since these are covered by the diagnosis of their identity, we hesitate to do more than call your attention to these complicating factors which are so often obscured by the sprain syndrome resulting from any accident or fall in which there has been a twisting wrench of the foot, and the spasm and swelling of the part may hide obvious displacement or fracture.

Among these conditions are:

1. Fracture of the malleoli
2. Fracture dislocation of the ankle
3. Fracture of the calcaneum
4. Fracture dislocation of the talus
5. Sub-talor dislocation
6. Fracture of the accessory navicular
7. Fracture of the os trigonum
8. Fracture of the base of the 5th metatarsal
9. Injury or fracture of congenital anomalies of the calcaneum and talus
10. Rupture of the tendo achillis

Fortunately, with the exception of the rupture of the tendo achillis, all these conditions can be identified by proper roentgen-ray examination. A recognition of the complicating potentialities is essential if the proper treatment is to be carried out. To miss them is to court the chance of a poor result with marked disability to this important joint.

If you are so fortunate as to examine the patient immediately after the accident finding only a localized swelling under the lateral malleolus you might be able to manipulate the ankle sufficiently to be assured that there were no instability of the ankle mortise. You then might be safe in assuming the injury to be a "simple sprain," particularly with the additional assurance of negative roentgen report. However, it is better to use expectant therapy than to trust to luck.

TREATMENT

As a routine procedure, the patient with a sprained ankle should be put to bed with the foot elevated on an inclined plane or pillows. A sponge-rubber tamponage (1 to 1½ inches thick) over the swelling should be applied with an elastic pressure bandage, the foot being held in a neutral position. Ice bags should be placed, one on either side of the ankle. This will in 24 to 48 hours reduce the swelling and pain and much of the muscle spasm. After this period of expectant treatment a clear evaluation of extent of injury can be made. To accurately determine the extent of the tearing and instability, it is vital to use some type of anesthesia. Ordinarily, we prefer Procaine, 1 or 2 per cent, injected into the joint and areas of tenderness (10 or 15 cc). This, we fortify with 150 to 400 TR units of Hyaluronidase (Wydase).

An accurate aseptic technique should be observed in the administration of any substance into the

joint. The area through which the injection is to be made should be shaved, scrubbed with soap and water, then painted with an antiseptic solution and draped with sterile linen. The operator should prepare his hands as though for an operation, put on sterile gloves and with a 23-gauge needle infiltrate the skin and tissues to the joint. This needle is withdrawn and an 18 or 19-guage needle passed into the joint. An aspirating syringe may now deliver bloody synovial fluid, which is evidence of extensive joint injury.

On the other hand, not being able to withdraw blood does not eliminate the possibility of joint instability. Once the joint is drained, the remaining procaine and Hyaluronidase is injected into the joint and infiltrated into the tissues. We frequently inject also 1 cc. of hydrocortisone acetate (Compound F) into the joint.

Each of these agents serves a specific purpose: The procaine for anesthesia, the Hyaluronidase prolongs and disseminates the action of the procaine and promotes the carrying away through the blood and lymph channels of extravasated blood and the products of disentegration of the injured tissue, while the hydrocortisone acetate seems to reduce the pain and hasten restoration of function.

Within a few minutes after the completion of this injection procedure, one can manipulate the ankle quite freely and readily evaluate the extent of the damage. Roentgen examination of the ankle, with the heel inverted, will often show the extent of displacement that occurred at the time of the injury and damage to the talus and the mortise. A few patients require a general anesthetic for this manipulative examination. If you have determined that you are dealing with a simple sprain, then a basket-weave strapping is sufficient to give stability and protection for the proper length of time. In a young, athletic patient it is possible to regain function of the ankle in two or three weeks; in older persons in a month to six weeks.

There has been a popular idea that athletics' sprains should be treated with procaine injection, and then they be allowed to use the ankle freely, and resume their sports activities. More harm than good has resulted from this short-cut procedure because the torn ligaments will heal in a stretched out position if the ankle is used in a normal way soon after extensive tearing and injury.

I have told the story many times of the star half-back spraining his ankle a few days before the most important game of the season, and the trainers and news commentators having so stressed the virtures of procaine treatment, that finally the attending surgeon gave in and on the day before the game made the infiltration of procaine and took the precaution of blocking the sural nerve. He was going to protect this player still further by a very strong adhesive plaster strapping and especially braced shoes to prevent his turning the ankle. The player played the game, but not his usual game. When asked after the game, if his ankle hurt him, he said, "no the ankle didn't hurt me in the least, but I could never tell where my darn foot was". It is far better to give nature an opportunity to heal these injuries rather than to force activity.

Sprains that cause mobility of the talus and perhaps separation of the tibio-fibular articulation must be treated much as one would treat a fracture. If there is no displacement between the lower end of the tibia and fibula a carefully applied cast should be put on, with adequate protection of the bony prominences and with the foot held at a right angle

with the leg. The cast should extend from the toes to just below the knee, the dorsal surface of the toes left so that they may move freely. If there is a tear of the tibio-fibular ligament and a widening of the ankle joint it is necessary to pull the fibula into direct contact with the tibia. This may be accomplished by holding the foot in inversion while inverting the talus and calcaneus. Then applying a cast with the foot at a right angle to the leg usually holds the tibia and fibula together and restores to normal width the ankle mortise. At the end of a couple of weeks the cast can be removed and a new cast applied with the foot in a neutral position. The second cast may be a walking cast usually, but one should make sure that there is no tendency towards tibio-fibular separation. Should separation occur, it is usually necessary to perform some operative procedure to hold the tibia and fibula together while healing takes place. Ordinarily, at the end of a month or six weeks in a walking cast, healing will be sufficient to allow free use of the ankle.

There are those who advocate the operative treatment of severe sprains, but in our opinion there is only one place in which an operation is indicated and that is in separations of the tibio-fibular ligament and spreading of the ankle mortise which cannot be held by inversion. This can be accomplished by means of a long nail, screw or bolt through the fibula and tibia.

Most of these sprains do not have disturbing competitions; rarely there will be interference with the circulation from extensive injury, traumatic vasol-spasm or local shock. Systemic disease condition may so interfere with healing that extensive atrophy, adhesions or traumatic arthritis result. With physical therapy, whirlpool treatments, contrast baths, paraffin baths and exercises, non-weight bearing and muscle stimulating, the chance of a good result is increased. One per cent procaine injections with intravenous procaine proved helpful; also compound F injected into the joint, particularly in older people with a tendency towards arthritis.

Some of these severe injuries need protection even after coming out of the cast. Usually an inside iron brace with an outside T strap and a lift on the outer side of the heel is sufficient. Some cases of ankle weakness can be helped by an out-flare heel.

Lastly, when treating complex or complicated sprains that do not respond to treatment, one should early insist on consultation by a surgeon who specializes in orthopedics and trauma of the extremities. The ankle is of such great economic importance to a patient as to make injury to this structure deserving of every consideration.

CURRENT LITERATURE

Errors and Failures in Gallbladder Surgery

Proper medical therapy should be tried before removal of the gallbladder is decided

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Gallbladder surgery risk is little more than that of an appendectomy, but failure to relieve or to ameliorate the symptoms is far commoner in the former. Removal of a stoneless gallbladder is more likely to fail than to succeed in improvement of symptoms. Surgical gallbladder disease, with few exceptions, is calculous gallbladder disease.

Clear-cut gallbladder colic, with or without antecedent dyspepsia, is the commonest indication for surgery. In a large share of cases, more complete diagnostic studies are in order, as gallbladder symptoms may so readily be mimicked by unrelated disease. Careful history alone may prevent diagnostic error.

Angina pectoris cannot always be ruled out; ECG may be inconclusive. Barium studies of the GI tract may reveal esophageal hiatus hernia, cardiospasm, peptic ulcer or pylorospasm, though ulcer is not uncommonly present with gallstones. Spastic colitis or colonic spasm associated with diverticulitis or incompletely obstructing neoplasm must be considered. The serum-amylase test has saved many from operation; tumors of the head of the pancreas or ampulla of Vater may occasionally be suggested on fluoroscopy.

Radicular pain from vertebral osteoarthritis, protruded disc or spinal-cord tumor may confuse; so may basilar pneumonia or diaphragmatic pleurisy.

Hepatitis, with or without jaundice, is often mistaken for gallbladder disease. The cirrhoses may be readily confused with biliary tract disease. Failure to perform or properly to judge diagnostic procedures may lead to unnecessary surgery.

Rarely is it advisable to remove a gallbladder for chronic non-calculous disease without a thorough test

of proper medical therapy. Neglected gallbladder disease is a forerunner of common-duct disease, stasis, dilatation, cholangitis, biliary cirrhosis, and occasionally of cancer.

Prior to operations of election proper diet to overcome protein and vitamin deficiencies; reduction of weight of the obese may lessen the operative risk. Diabetes, common with biliary tract disease, must be well controlled. The hypoprothrombinemia associated with obstructive jaundice may yield to the use of parenteral vitamin K.

In an emergency the correction of dehydration and electrolyte imbalance should precede operation. Blood for transfusion should be available. The stomach should be emptied by suction, and the tube can be left inlying during and after surgery.

Common indications for choledochostomy are:

1. Palpable stones in common or hepatic ducts.
2. History or presence of jaundice not adequately explained by pressure on the duct.
3. Dilatation of common duct; thickening and opacity of duct wall.
4. Enlarged cystic duct.
5. Presence of multiple bird-shot calculi in gallbladder.
6. Small, shrunken gallbladder.
7. Repeated attacks of cholangitis with chills, fever, jaundice.
8. Cloudy bile or "ground-pepper" particles in bile issuing from cystic duct stump.

Inadequate exposure prevents accurate recognition of the parts. Traction during ligation of the cystic duct may result in inclusion of the common duct in ligature or clamp. Blind application of hemostats easily results in crushing or ligation of the hepatic duct. Without adequate visualization a segment of the wall of the common duct may be excised, or the duct may be divided.

Ligation of the cystic duct close to the common duct under direct vision, without the use of clamps prior to its division, satisfies us as to the safest technique.

Insecure ligation of the cystic duct can result in serious or fatal bile peritonitis. Leakage has occurred from puncture wounds of the common duct following needle aspiration of bile.

An increasing awareness of the coincidence of associated common duct disease is essential to improvement in surgery of the gallbladder.

Illinois Med. Jour., May, 1953.

Jaundice Due to Methyltestosterone Therapy

Methylstestosterone was introduced into clinical practice in 1939, and its efficacy has been established not only for androgen replacement therapy but also for many other conditions. The first suggestion that it might be the cause of jaundice was made by Werner in 1947. A number of similar cases have been observed at various clinics. It is doubtful if the existence of liver disease, even with jaundice, should be regarded as a contraindication to treatment with methyltestosterone in those conditions where it is indicated.

British Medical Jour., 7:143, 1953.

Treatment of Common Skin Diseases

To avoid overtreatment, the physician should be familiar with the potency of the medicaments

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Accurate diagnosis is the first step in therapy. Diagnosis requires careful history and physical examination, laboratory and x-ray procedures and special studies as necessary. A skin disorder may be a manifestation of an internal malignant tumor; it may cause certain surgical symptoms; or it may be the only sign of a serious blood dyscrasia.

The most frequent dermatologic problems are dermatitis of various types, pyodermas, neurodermatitis, acne vulgaris, ringworm, seborrhea, pityriasis rosea, warts, malignant and premalignant lesions. Itching, often without objective cause, may present a large element of concern to patient and physician. Drug eruptions, especially following the use of antibiotics, are frequent. In clinic practice, animal parasitic infestation and pyodermas may predominate; pediculi may infest private patients. It can safely be said that inflammatory (dermatitic, allergic) and infectious processes comprise the bulk of practice, while intoxications including drugs and disturbances associated with certain visceral diseases follow closely.

The physician must know the physical and chemical properties of the medicaments he uses, and he must not overtreat. Many cases of ivy poisoning are aggravated by injections of poison ivy extracts.

He should do anything medically indicated, should treat the whole patient at once.

In allergic cutaneous disease, the antihistamines should be used orally or parenterally, especially in urticaria and angioneurotic edema and itching from various causes. Their local use is not recommended. Principles for the use of antibiotics in pyogenic infection are being established. Local use of antibiotics is condemned except in the case of bacitracin, tyrothricin, and neomycin.

ACTH and cortisone fill a limited place in the management of some cutaneous diseases. These compounds may relieve symptoms, but do not cure. In chronic, serious dermatoses ACTH or cortisone is of little value, as the degree of im-

provement is usually slight and followed by a relapse within a short time. This group includes scleroderma and mycosis fungoides.

Dermatitis is the most frequent primary and secondary dermatosis; eruptions are characterized by varying degrees of erythema, edema, vesiculation, oozing, lichenification and itching. The cause, if known, should be removed, rest and adequate diet are of value, severe cases require hospitalization.

A change of doctor may give a temporary psychotherapeutic effect. IM administration of 10 c.c. of the patient's own blood daily for an indefinite number of treatments may act in the same way.

For soothing. Compresses 10 to 20 min. t.i.d. should be employed: Burow's solution (aluminum subacetate in cool water; potassium permanganate, 1:8000 or 1:10,000 aqueous solution; warm or cool skim milk; thin boiled starch solution.) If the involved areas are extensive, use colloid baths of starch (two cups to a tub of water—50 gals.; oatmeal or "Aveeno." Tar baths, such as coal tar solution, ½ to 3 ozs. to a tub of water. Baths should be followed immediately by a grease (paraffin, boric acid ointment, etc.)

For control of infection. In some cases penicillin by injection is the best procedure. In a low-grade, persistent bacterial infection, further therapy will depend on sensitivity of organisms to particular agents.

For cleansing. Soap substitutes such as Lowila cake, Phisoderm, or Dermolate used cautiously. Colloid baths are frequently satisfactory.

For relief of itching. Rest of the parts, use of a cradle, 0.5 to 1% menthol or camphor; sedation by benadryl or pyribenzamine—50 mg. t.i.d. orally for adults; 10 to 25 mg. for children—barbiturates in moderate dosage; chloral hydrate, 20 gr., repeated once; restraint with splints, occlusive dressings, and bandages as necessary.

Simplified Scheme of Local Management

For acute cases, simple, soothing local applications should be used. Good preparations for general use are:

Burow's solution	10.0
Lanolin	20.0
Lassar's paste	30.0

or

3% ichthyol in zinc oxide ointment.

If the patient is wool-sensitive, avoid the local use of wool fat or its derivatives. Employ constitutional treatment as indicated. Do not vaccinate, inoculate, or perform cutaneous tests during the acute phase.

For subacute or chronic cases. Local use of 2 to 6% crude coal tar and 6% zinc oxide in petrolatum.

Penn. Med. Jour., June, 1953.

Circulatory Causes of Fainting

Disturbances of cardiac rhythm and rate, and of peripheral blood pressure are common causes of collapse

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The history should include age, sex, past medical and dietary ills. Examination alone will rarely suffice.

In disease of the heart when cardiac output is less than that necessary to maintain an adequate supply to the brain, fainting is prone to occur, as after too strenuous exercise.

Complete auriculoventricular block usually causes fainting spells. Other causes are excessive hypertension, arteriosclerosis with hemorrhage or thrombosis, neoplasms of the brain, by interference with circulation, or as a result of circulatory changes within the neoplasms themselves.

Disturbances of cardiac rhythm and rate, and of peripheral blood pressure are common causes of collapse. Heart pause may take the form of an occasional dropped beat or perhaps two or three when the rate is rapid; when, occasionally, the pause is 3 to 5 seconds, syncope may occur; long pauses may cause convulsions.

In Adams-Stokes syndrome, the heart rate is so slow and the diastolic pause so long that adequate cerebral circulation is not maintained. A similar situation may develop in paroxysmal arrhythmias where there is a pause at the beginning or the end of the paroxysm, or in tachycardia of varying origin, in which the ventricular rate is so rapid that ventricular filling is insufficient to support circulation to the brain. In these disturbances of the cardiac rhythm and rate, the diagnosis is most readily made by physical examination; the ECG to identify the specific disturbance of rhythm.

Of aid in establishing cause of syncope are:

"Running in place" for 3 min. will raise cardiac output and 0 requirement. In severe mitral stenosis or severe hypertension the cardiac output may not keep pace with the requirement; the patient may collapse.

The patient comfortable in a chair, sphygmomanometer is applied to the arm and a direct recording ECG is connected to the patient. A syringe containing atropine 1/75 should be at hand. Pressure is applied to the carotid sinus, first to the r., then to the l., then to both, if necessary;

several sudden short applications. While recording the ECG follow the vagal effect. If vagal heart block is produced and persists more than 6 to 8 sec., atropine should be given IV. ECG's should be taken continuously during the procedure and for 5 min. after.

The history of collapse on a sudden change from a horizontal to the vertical position suggests orthostatic hypotension. Organic disease of central nervous system is rarely a cause.

The patient inspires deeply, closes his glottis and attempts to expire forcibly. Sudden collapse is a positive sign that the syncope is due to poor venous return.

The pulse rate and b.p. are observed before the patient arises from bed in a.m., again immediately after he leaves the bed and assumes an erect position. Sudden collapse and drop in b.p. means poor venous return.

Amer. Prac. & Dig. of Treatment, 4:449, 1953.

Practical Aspects of Burn Therapy

First-aid therapy includes all treatment given by emergency personnel or a physician at the scene of the accident. As soon as feasible all clothing and constricting jewelry etc. should be removed except those adjerent to the burned surface. The patient is then covered with or wrapped in a clean sheet and the burned skin is not further disturbed. The application of oils, ointments or even butter do not relieve pain or aid in wound healing, and may be harmful since such materials must be removed at the time of initial dressing.

Superficial burns are painful, second and third degree give little pain. Heavy narcosis complicates treatment and diagnosis and may contribute to shock. If morphine is required for associated injuries, it should be given IV. Restlessness is easily controlled by small doses of a short-acting barbiturate. One million units of aqueous penicillin should be given as soon as practicable to insure saturation of the wound exudate and its incorporation in the burn crust.

Despite the patient's repeated request for water, fluids by mouth should be given with extreme caution, since excessive fluids by mouth may lead to persistent nausea and vomiting. Also, there is danger of further diluting the already depleted body electrolytes, and in turn the possibility of water intoxication. Since large amounts of sodium chloride and bicarbonate are lost into the burned areas, a solution of one level tablespoon of table salt and one teaspoon baking soda to a quart of iced water should be made, and the amount of this to be consumed by the patient limited to one or two quarts during the first day and when taken as sips serves to quench the thirst.

Hospitalization should be accomplished as soon as possible.

E. H. Ellison, et al, *Ohio State Med. Jour.* 49:798, 1953.

Exposure Treatment of Burns

Crusts and eschars must be preserved from injury to prevent infection

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This method of treating burns has distinct merit in selected cases, and may prove of incalculable value in the initial care of burns under disaster conditions.

Patients whose burned areas permit complete exposure to air are placed on clean but usually not sterile sheets. If shock is present it is countered by administering whole blood and electrolytes. Severe pain is relieved by intravenous morphine. Also administered are crystalline penicillin (400,000 units), procaine penicillin (600,000 units), and tetanus antitoxin or toxoid. Definitive local care is initiated as soon as the patient's condition is stabilized. All burned areas and surrounding intact skin are washed gently, either with bland soap, or with a detergent containing hexachlorophene. Blisters are opened and all detached epithelium is cut away. The surface is rinsed with liberal amount of water. No local applications of any sort are used. The patient is then placed in bed in the most comfortable position permitting complete exposure of the affected areas.

Drying of the exudate is obtained in a position that provides complete exposure, which usually is possible without much difficulty, and is attained in 48 to 96 hours. Deep dermal burns have scanty exudation and form smooth crusts that are level with the skin. Eschars shrink owing to dehydration, and consequently are depressed below the intact skin. Crusts and eschars are usually indistinguishable in color. Both crusts and eschars must be preserved from injury because their intactness is vital for the prevention of infection. Cracks are ready avenues for invading bacteria. If infection does occur, the crust or eschar surrounding the crack should be lifted from the underlying tissue for a variable distance. Coverage with a piece of fine-mesh gauze is believed to favor the drying process. However, if there is a spread of suppuration it will be necessary to remove crusts or eschars immediately and to apply dressings.

Treatment by exposure ends in partial thickness burns when complete healing has occurred, and in

full thickness burns when eschar removal has been achieved. This means that exposure is applicable only for the first two to three weeks, which is of course only a short phase in the long period of treatment of an extensive deep burn. Most eschars should be excised in 10 to 14 days. Very deep dermal burns with minimal associated full thickness injury frequently heal spontaneously in 30 to 40 days if the covering remains intact. In general, however, it is best to remove the covering of such burns if they fail to heal in 21 to 28 days, and to apply a skin graft. With an increasingly aggressive approach to eschars, the interval between burning and grafting has been greatly reduced, and it seems certain now that the exposure method, properly applied, does not delay grafting of deep burns.

The preparation of the recipient site for grafting is a problem which is common to the treatment of all deep burns. *Granulating surfaces must never be exposed.* After removal of eschars, the authors prefer to use moderate compression over bulky, absorptive dressings both before and after grafting, as has been recommended by Allen and Koch. The outstanding feature of exposure treatment is the control of infection. Deep dermal burns heal uneventfully under crusts, which protect the burn from mechanical and bacterial trauma. The method is potentially dangerous in that it may encourage inexperienced personnel to delay skin grafting. Judiciously applied, exposure is as good as other methods and, in certain burns, it is definitely superior. In times of disaster, exposure therapy would probably be the only feasible method of treatment, and here it is particularly gratifying that excellent results can be obtained by its use. However, its application can never be an excuse for neglect.

Ann. Surg., 137:456, 1953.

Oxytetracycline in Orocervical Facial Actinomycosis

Seven proven cases of orofacial actinomycosis are reported which responded to treatment terramycin. The dosage ranged from 250 to 500 mg. six-hourly, given over periods ranging from 2 to 6 weeks. Incision and drainage were carried out if indicated, for antibiotics are not considered a substitute for concomitant surgery and hygiene.

The only toxic reaction to the therapy was mild diarrhea which lasted 6 days in one patient. Six of the patients were free of infection when seen again after periods extending from 6 to 18 months after discharge from the hospital. The seventh patient (he had initially received only 8 days of treatment) relapsed 3 weeks later, but responded satisfactorily to a second course of treatment.

S. L. Lane, et al, *J. A.M.A.*, 151: 986, 1953.

Diagnosis of Ocular Headache

Frequently diagnosis can be established by a process of elimination of causes

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Headache is one of the commonest of all human complaints, and often presents the physician with a formidable task in discovering its cause. There are, however, quite a number of easily recognized causes, such as: impending febrile illness, hypertension, diabetes, etc.; but much more often an apparent cause is not discernible. It is widely believed that *eyestrain* is a very common cause of headache. This belief is erroneous, for headache due to eyestrain is a very uncommon finding in the ophthalmologist's office. To the ophthalmologist, eyestrain is synonymous with fatigue of the ciliary muscle caused by prolonged accommodation. A good night's sleep is sufficient, however, for the complete recovery of the ciliary muscle from this fatigue. It is not accommodation *per se* that causes headache; it is the attempt to maintain binocular vision. Difficulty in maintaining binocular vision is caused by anisometropia and muscle imbalance. Anisometropia means a condition in which there is a difference in the refraction in the two eyes. A headache is most likely to occur if this difference is due to astigmatism. The most common muscle imbalance causing eyestrain headache is convergence insufficiency. Hyperphorias and esophorias also occasionally cause headaches. It is difficult for the general practitioner to determine if hyperphoria or esophoria is present, but he can readily check for convergence insufficiency. The normal adult should be able to converge on a pencil or finger brought toward his nose to within 10 centimeters. If he is not able to do this he has a certain amount of convergence insufficiency. Headache due to eyestrain usually begins in the afternoon or evening; it is associated with *close* work. If the headache begins upon arising in the morning, eyestrain is immediately ruled out.

Glaucoma is another cause of ocular headache. There are three categories of glaucoma: primary acute, simple, and secondary. Primary acute glaucoma is almost always congestive. The vision in the affected eye is markedly reduced and the pain is severe although not necessarily localized in one eye. The

diagnosis depends upon the acute onset, the marked loss of vision, congestion, the severe pain and the fact that the eye is hard to palpation.

Chronic simple glaucoma is insidious in its course. Here the peripheral vision is lost before the central visual acuity is affected, and the patient may be 70 to 80 per cent blind before he is aware of it. The eye usually is perfectly normal in appearance except that the iris may be sluggish in reaction or may not react at all and remain dilated. The pain in simple chronic glaucoma occurs at night after the patient has retired, usually toward dawn; it generally clears up about noon. The pain at night is explained by the fact that the blood volume is roughly increased by 30 per cent during the night as against daytime activity, because of reduction in urine output, sweating and loss of moisture with breathing while resting in bed. This increase in blood volume also increases the ocular fluids and hence the intraocular pressure which causes the pain. In ruling out this condition as a cause of headache, the ophthalmoscope and sensitive index fingers are the best intruments. If a tonometer reading is taken it will show tension amounting to 30 to 45. Finally, in secondary glaucoma the cause can usually be found in the history of iritis, injury to the eye or ocular surgery.

Iritis is a third cause of ocular headache. Here the pain is centered over the affected eye but radiates posteriorly. It is present constantly, and gets worse toward evening. Photophobia, diminution of vision and blurred print are frequent symptoms. The pupil is constricted and reacts sluggishly or not at all to light. Diagnosis of iritis in a white eye is at best difficult, although the signs are sufficient to suggest the ocular origin of the headache.

Another cause of headache, *orbital neuralgia*, is a neuralgia of the ophthalmic branch of the fifth nerve. It is invariably unilateral and is a diagnosis of exclusion. It is characterized by the lack of findings. The pain is peri-orbital and may come on at any time of the day, last from a few minutes to several hours, and can be severe enough to lead to incapacitation. The treatment for orbital neuralgia is thiamine chloride 20 mg daily, preferably given hypodermically.

Another general cause of headache is so-called *opthalmorhinalgia*, which really is an allergic disorder. Usually a definite rhinitis is present, but the pain is referred to one or the other peri-orbital region, the pain being generally unilateral. In the absence of hay fever, helpful indications in the diagnosis are the presence of pallor, edema of the nasal mucosa and a high eosinophil count from the nasopharynx. There are no other findings in this condition. Treatment consists in anti-allergic measures.

Ethmoiditis or *frontal sinusitis* may also be accompanied by headache. The pain of ethmoiditis is referred to the peri-orbital region on the side affected. The pain of frontal sinusitis is referred directly to the frontal region. The most common of all headaches is that due to *nervous tension*. It may come on at any time during the day or night, but usually toward evening; it may begin suddenly, last from two to three weeks and then disappear as suddenly. As in all functional disorders, vagueness and variation of the history readily point to the functional basis of the complaint.

Finally, brief mention is made of a type of headache which wakens the patient at night, the so-called histamine or Horner's headache. The symptoms are characteristic and cannot be mistaken for that of any

other type of headache. The onset is sudden and the pain is unilateral. There is blurring of vision, excess lacrimation and salivation, and flushing. The possibility that an intracranial lesion may likewise be a cause of this condition must not be overlooked.

Admittedly, the general practitioner's office is usually not equipped to make a definite diagnosis of the several possible causes of headache which have been mentioned. But by a process of elimination of causes he frequently can arrive at the real source.

J. Oklahoma State Med. Assn., pp. 114-116, May 1953.

Current Treatment of Rheumatic Fever

Treatment of rheumatic fever includes supportive measures, antistreptococcic measures, and suppressive measures making use of the salicylates or hormones. At the Children's Hospital of Michigan salicylates are used for jild cases without cardiac involvement and corticotropin (ACTH) or cortisone for severe cases and those with cardiac involvement. The results would seem to indicate that many patients with mild carditis would probably be served as well by the salicylates than by the hormones.

The initial daily hormone dosage was 300 mg for cortisone and 100 mg for ACTH; this was step-wise reduced to a maintenance dose which was usually 100 mg for cortisone and 40 mg for ACTH. Cortisone was given by mouth only. Penicillin was administered prophylactically, and a low salt diet with supplemental potassium was maintained. It was found that at least a month of treatment is required for patients with active carditis, and that bed rest must be continued for at least two weeks after discontinuance of hormone therapy. Sulfadiazine prophylaxis was instituted during convalescence and is to be continued for several years. In most of the 44 patients treated with hormones, the sedimentation rate and electrocardiogram became normal within three weeks after institution of hormone therapy.

Two patients died: one, a child admitted in extreme cardiac failure, and the other had arrested tuberculosis. In the latter instance, activation of the tuberculosis was considered less than the danger from rheumatic fever. It is believed that the fatal end may have been related to the treatment. Serious relapses occurred in 5 cases, two of which had been treated inadequately. Fifteen minor relapses improved spontaneously. Euphoria and salt water retention were the only really troublesome side effects of the hormone therapy.

M. S. Hecht, et al, *J. Mich. Med Soc.*, 52:51, 1953.

"ARTHRITIS OF THE MANDIBULAR JOINT" TURNS OUT TO BE TETANUS

A housewife, aged 62, admitted to hospital with a provisional diagnosis of arthritis of the 1. temporo-mandibular joint. Her illness began 10 days earlier with stiffness of the neck, pain in the 1. jaw joint, followed a week later by difficulty in swallowing. On admission the patient was suffering severe pain in the region of this joint, aggravated by any movement of the jaw. She was afraid to talk and had taken little by mouth for 3 days. The 1. masseter muscle was in strong spasm, the r. masseter and the neck muscles were moderately hypertonic. There was an ulcer, 1x.5 cm., with indurated edges on the inner surface of the left cheek. X-ray showed no abnormality of joints.

The severe pain persisted, and there was little relief from aspirin, codeine, and pethidine. Fluid was administered per rectum. By the 5th day she was unable to take anything by mouth; some risus sardonicus, and hypertonic abdominal and leg muscles, a provisional diagnosis of tetanus was made and 200,000 units antitetanic serum given, and Mephenesin IV with saline-and-glucose infusions through a fine polyethylene tube; 300,000 units of penicillin given 4-hourly, and 300,000 units of procaine penicillin daily.

Paraldehyde, 4 ml. IM, Mephenesin continued IV 42 hrs., 30 g. being given in the first 24 hrs., and a total of 40 g. in 42 hrs. Muscle relaxation was readily attained without any depression of respiration. At one stage during the administration of mephenesin the patient complained of headache, and it was found that the b.p. had fallen to 70/50. This was restored to 170/110 with relief of headache, by slowing down the rate of administration of mephenesin and raising the foot of the bed.

While under mephenesin a polythene tube was passed through the nose into the stomach and feeding was started with fortified milk and glucose in orange juice. After the first 42 hrs. mephenesin was given by nasal tube. Spasm was controlled by doses of 2 g. 2-hourly for three days, and then by 2 g. 4-hourly for one day.

When able to talk she recalled incidents that suggested two possible portals of entry; First, after being fitted with new dentures 4 mos. earlier, she repeatedly bit the inner surface of the left cheek; Second, 3 to 4 weeks before the onset of symptoms, on going indoors after playing with children on a patch of sand, she found that the sole of her left slipper was torn and there was a little blood beneath the great toe.

This case illustrates the benefit obtained from mephenesin, and emphasized the wisdom of regarding any case of trismus as tetanus unless it can be accounted for by a definite lesion.

W. H. Smith, *British Medical Jour.*, 5:1090, 1953.

THERAPEUTIC TRENDS

Oral Treatment of Pruritus

Orally administered procaine combined with ascorbic acid is claimed to offer dramatic relief from pruritus from whatever cause. The statement is based on the results obtained in 31 patients with pruritus of allergic origin. The drug is given in tablet form, each of which contains 250 mg of procaine hydrochloride and 150 mg. of ascorbic acid. The tablets are taken every four hours, or as needed.

No side reactions are said to have been observed, not even with overdosage. The drug was effective in relieving 8 patients with contact dermatitis, 4 patients with dermatitis venenata due to Rhus toxicodendrum, 3 patients with urticarias, and two youngsters who coincidentally had scabies.

The drug was of no benefit in the treatment of bronchial asthma or of such allergic conditions as hay fever, vasomotor rhinitis, even though pruritus, if present, responded effectively.

F. A. Parish, *Ann. Allergy*, 11:85, 1953.

An Attempt to Prevent Erythroblastosis Fetalis by Use of Cortisone During Pregnancy

Cortisone was administered orally from the 34th to the 37th week of pregnancy in an attempt to suppress antibody action on an Rh-positive fetus. A dose of 100 mg. of cortisone was administered daily without harmful effects being observed on the mother. Induction of labor at the end of treatment resulted in the delivery of a mildly affected infant who remained well after an exchange transfusion.

The authors deem this one case encouraging enough to warrant further trials, and especially so, since the mother had lost a previous child (her second) from erythroblastosis fetalis. Her husband was homozygous.

J. R. Anderson, et al, *Brit. Med. J.*, 2: 542, 1952.

Anticonvulsants: Mysoline, Milontin and 1461L.

Sixty-four patients with epilepsy, all previously treated with standard anticonvulsant medications without much success, were given one or more of the compounds: Mysoline, Milontin and 1461L.

Mysoline was found to be effective drug for all types of seizures and especially convulsions. This drug is preferable to phenacemide in the treatment of psychomotor episepsy because it apparently is without serious toxicity. It is the authors' custom to use Mysoline when dilantin and phenobarbital have failed in a patient with psychomotor epilepsy and to proceed to phenacemide if Mysoline also fails. Mysoline appears to work well in conjunction with other medicines. Toxic signs of dizziness, nausea, vomiting and

ataxia appear early (usually after 1 tablet) and disappear rapidly when the medication is discontinued. Toxic signs are easily recognized. The average effective dose appears to be 500 to 750 mg when the drug is used with other medicines, and 750 mg to 1 gm when it is used alone.

Milontin with the dose of 1.5 gm a day markedly reduced seizures in the petit mal triad and in psychomotor groups to a significant extent. It appears to have little effect on convulsions unless they are a direct result of the psychomotor or petit mal attacks. Higher dosages and a greater number of patients must be utilized before a definitive answer can be given. The toxicity of Milontin appears to be low.

The number of patients treated thus far with *1461L* is insufficient to permit concrete conclusions to be drawn. One patient with petit mal was completely controlled, whereas convulsions were made worse in another as the petit mal was improved. In 50 per cent of the patients seizures were unchanged or became worse. No toxic signs were observed.

These investigations are continuing and more preparations are being tried.

Bushnell Smith, M.D., Francis M. Forster, M.D., *Med. Annals District of Columbia*, 22:279, 1953 .

Cortisone and ACTH in the Management of Terminal Malignancy

ACTH and cortisone are stated to have a definite place in the physician' armanentarium for the treatment of inoperable terminal malignant disease, because they bring about an improved mental state, permit better nutrition, and allow for minimal narcosis in the control of pain.

These hormones make it possible for the patient with a hopeless neoplasm to maintain a more normal existence for a longer period of time. Unless there was consistent vomiting, cortisone was given orally in the dosage of 300 mg. on the first day, 200 mg. the second, and then 100 mg. daily. When oral administration was not possible, cortisone was given intramuscularly or ACTH parenterally. In the three cases cited in this report, cortisone produced immediate improvement in the patients' mental and emotional outlook, diminution of pain, improvement in appetite and gain in weight. In one instance the patient was able to return to work.

A. A. Raab, A. Gerber, *New York State J. Med.*, 53:1333, 1953.

Acute Barbiturate Intoxication

Treatment of barbiturate intoxication consists of general measures —as gastric lavage, adequate oxygenation, prophylactic use of antibiotics, prevention of atelectasis and aspiration by keeping the patient's broncho-tracheal airway open and maintaining proper fluid balance. Picrotoxin is the "specific" drug of choice. This powerful central nervous system stimulant can be safely given if discontinued promptly at the first sign of muscular or nervous stimulation. Its action is brief, being excreted in 20 min. Picrotoxin should be given in quantities sufficient to cause stimulation, almost hourly until the patient remains responsive between injections.

The patient deeply intoxicated by one of the barbiturates, like the person in diabetic coma or in other medical emergencies, requires constant and careful nursing and medical attention.

W. H. Higgins, Jr., *Virginia Med. Monthly*, 80:218, 1953.

AIDS IN DIAGNOSIS

Guillain-Barre Syndrome

The Guillain-Barre syndrome is an acute disorder of the peripheral nervous system manifested primarily by paralysis, but frequently including sensory loss as well. There is often a history of an antecedent infection, usually from a nonspecific disease of the upper respiratory tract. Occasionally, the syndrome follows a specific disease, usually infectious mononucleosis.

I. C. Plough, R. S. Ayerle, *New England Jour. of Med.*, 249:61, 1953.

Meningococcal Disease

Meningococci are widely distributed in the general population, and yet the disease is infrequent in those who harbor the organism. The development of meningococcal disease depends upon factors other than the presence of carriers.

There must be a high degree of natural immunity to the disease since only few instances of more than one case in the same family have been reported, and since only 1 in 1,000 who have the organism in the nasopharynx develops disease. Immunity after an attack is presumed to be durable. Immunity of carriers is probably due to repeated exposure to meningococci of low virulence.

R. B. Disenhouse, *Journal-Lancet*, 73:305, 1953.

Test of Heart Efficiency

To assess cardiac efficiency the test for British Army recruits was to place one foot on a stool 18 in. in height and to raise the body 20 times in 60 sec. In healthy subjects in good physical training the pulse should return to the resting rate within one min.

Crighton Bramwell, *British Med. Jour.*, 2:700, 1953.

Measurement of Tumor Growth

Two methods are described which apparently provide an approximation of a quantitative measurement of alteration in the growth of certain tumors.

The first method relies on the unusual chemical composition of some tumors. Lymphoid tumors and myeloid tissue of acute leukemia contain three times as much P/unit N as does muscle tissue. A positive or negative balance of these elements should indicate the status of the tumor tissue; minimal alterations of about 30 gm. wet weight of tissue/day may be detected. It may be assumed that 1 gm. of osteolytic tumor results in the destruction of 1 gm. of normal bone, which would yield a negative calcium balance of about 150 mg.—an amount which is easily measurable.

O. H. Pearson, C. D. West, *Proc. Am. Assn. Cancer Res.*, 1: 42, 1953.

A Clinical Method of Determining Pelvic Disproportion in Pregnancy

In 1947, a primipara at term was sent to the radiologist for pelvimetry. On vaginal examination, the head was barely dipping into the pelvis. No descent could be obtained by manual means. Yet the x-ray plates showed the presence of a deeply engaged fetal head. The radiologist explained that the engagement of the head was merely the result of the use of the standing position for this exposure.

Thenceforth, vaginal examination under aseptic conditions in the erect position has been used routinely in my cases presenting an unengaged head towards the termination of pregnancy. In order to give the force of gravity ample opportunity, the patient walks about the room for several minutes before the examination. She then places her hands on a table and bends her trunk slightly forward at the hips. The examiner sits on a low stool behind the patient. After the insertion of the examiner's digits, the patient extends her hips. The fetal head is now felt in relation to the bony landmarks. If the head is now felt deep in the pelvis the inlet is ample.

N. M. Hornstein, *Southern Medical Jour.*, 46:762, 1953.

Serum Tests for Syphilis in the Newborn and the Infant

The serologic diagnosis of prenatal syphilis in the newborn depends on the observation of persistent and/or rising quantitative titers of syphilitic reagin and/or treponemal immobilizing antibody. There are three types of antibodies which may be passively transferred from mother to fetus to cause positive serologic reactions. They are: (1) syphilitic reagin (univalent antibodies, found by complement-fixation), (2) biological false positive reagin (also detected by standard lipidal serologic syphilis tests) and (3) antitreponemal antobody (determined by the treponemal immobilization test of Nelson and Mayer).

These tests should be used only to confirm clinical and radiological findings. Children with passive reaginemia need not be treated and those with prenatal syphilis require only one course of therapy. Retreatment does not hasten the reduction in titer.

C. R. Rein, G. H. Kostant, *Medicine Illustrated* 7: 44, 1953.

Bronchiogenic Carcinoma Simulating Virus Pneumonia

Apparently 78 to 80% of carcinoma of the lung is seen in men and the lung is the most common site of cancer in males. Therefore every man over 40 years of age with unexplained thoracic discomfort, persistent cough, hemoptysis, or recurrent "virus pneumonia" should be suspected of having pulmonary carcinoma.

Recurrent virus pneumonia and protracted lobar pneumonia are infrequent in adults without underlying lung pathology. We should suspect any patient suffering from pneumonia who does not respond to adequate antibiotic therapy within three weeks of having either a Friedlander pneumonia lung abscess, tuberculosis, or bronchial obstruction. All efforts should be made to arrive at the correct diagnosis as early as possible and any patient with pulmonary pathology in whom bronchiogenic carcinoma cannot be excluded by other means should have an exploratory thoracotomy.

H. R. Custer, K. P. Klassen, *Ohio State Med. Jour.* 49:793, 1953.